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ABSTRACT

Relatively little attention has been given to the importance of student earnings in the total financing of postsecondary education. The present study deals with this important question. It attempts to answer these questions: (1) How much are students earning in the aggregate? How much of these earnings are increasing resources to finance education, raising the standard of living of the students, and substituting for parental contribution? (3) What are the trends in the various components of total earnings? Adjusting for changing family income characteristics and inflation, How has the disposition of earning changed? (4) What has been the effect of the increase in the proportion of low-income students on earnings and the disposition of earnings? (5) What has been the discernible effect of changing college costs on students' work effort, earnings, and contributions from assets? (Author/KE)

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TRENDS IN THE SOURCES OF STUDENT SUPPORT FOR POSTSECONDARY EDUCATION

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FOREWORD

No education-related topic has occupied the attention of the public in recent years as has the financing of postsecondary education. Several commissions have been appointed to consider the major questions related to this issue. Scores of state, regional, and national conferences have been convened on this subject. Hundreds of speeches, dealing with nearly all aspects of the question, have been delivered. These varied activities have been chronicled in a multitude of reports, books, and articles which have been published during the past 5 years.

The writing on the financing of postsecondary education has focused on the role of the federal and state governments. This emphasis is consistent with recent patterns of financing in which the volume and importance of public funding have increased dramatically. However, relatively little attention has been given to the importance of student earnings in the total financing of postsecondary education. The present study deals with this important question.

The author of this study, Joseph Froomkin, is a respected economist. Much of his recent research has been devoted to economic issues which affect postsecondary education. He has worked for several governmental agencies, as well as in business, and has served as an economist on various governmental commissions.

The American College Testing Program (ACT) has had a continuing interest in the financing of postsecondary education. Two other ACT publications, *Financing Higher Education: Alternatives for the Federal Government* and *Exploring the Case for Low Tuition in Public Higher Education*, have dealt with this issue. ACT is pleased to make the results of this important recent study available to the public.

C. Theodore Molen Jr.
Vice President
Publications and Public Affairs Division

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Joseph Froomkin

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Washington, D.C.

INTRODUCTION

Scope of study. This study attempted to answer these questions:

1. How much are students earning in the aggregate?

2. How much of these earnings are:
   a. increasing resources to finance education?
   b. raising the standard of living of the students?
   c. substituting for parental contributions?

3. Comparing student earnings today with earnings 10 years ago, what are the trends in the various components of total earnings? Adjusting for changing family income characteristics and inflation, how has the disposition of earnings changed?

4. What has been the effect of the increase in the proportion of low-income students on earnings and the disposition of earnings?

5. What has been the discernible effect of changing college costs on students' work effort, earnings, and contributions from assets?

Four previous studies. Previous attempts to calculate the trends of student earnings were based upon four studies of undergraduate budgets, the earliest conducted in 1952 and the latest completed some 20 years later. (See Table 1.) These studies did not lend themselves to making such estimates, however, since the questions asked in each of them were slightly different, and the reported earnings and expenditures of students were not strictly comparable. The small number of students interviewed and the high variability of the student earnings made it dangerous to place much faith in changes from one year to the next. Furthermore, at least two of the four studies were unrepresentative of all the full-time undergraduate population, thus casting additional doubt upon the accuracy and relevance of statistics in these reports. These studies conveyed the impression that the share of term-time earnings covered by student earnings had changed but little in the past 20 years, possibly rising from slightly over a quarter of the total outlays of full-time students in 1952 to about a third some 20 years later.

Estimates of student earnings based on the 1960 and 1970 censuses. New estimates of student earnings for full-time undergraduate students were derived from larger samples drawn from reports in the 1960 and 1970 decennial censuses. The larger samples make it possible to estimate changes between the two time periods with greater confidence. We can now state with certainty that the average undergraduate full-time student earnings in current dollars were $714 in 1960, and $1,128 in 1970 ($860 in 1960 prices). Total earnings of full-time undergraduates amounted to $1.2 billion in 1960, and $5.8 billion ($4.4 billion in 1960 prices) 10 years later. This fivefold increase in earnings was due to a 58 percent rise in per capita earnings, as noted above, and a threefold increase in the number of students. (See Table 10.)

In both periods, the vast majority of men students, roughly 9 out of 10, worked some time during the year. Among single full-time women students, some 7 out of 10 worked in 1960 and 75 percent in 1970. Some 60 percent of the married women had earnings in the earlier time period, and two-thirds in 1970.

Higher earnings of students resulted from (1) higher hourly wages, although these increased more slowly than all hourly wages in the economy, and (2) slightly longer hours worked, and in the case of women, higher labor participation rates. The number of weeks worked did not change significantly between the two time periods.

Share of outlays financed by earnings. Further analysis of these figures leads us to believe that the share of student outlays financed by earnings increased significantly during the 1960s. We estimate that unmarried full-time undergraduates earned 31 percent of their full-year expenses in 1960 and some 40 percent in 1970. During the same time period, married male full-time undergraduates also increased their contributions to the family resources quite significantly, from slightly less than one-third to two-fifths of the total. Married female full-time students continued to contribute the same 8 percent of the total family earnings in both 1960 and 1970. We have further estimated that single female students contributed 20 percent of their term-time expenses in 1960 and 33 percent in 1970.

The increase in the role of earnings in financing expenditures was more dramatic in the case of women than in the case of men. Women earned one-sixth of their annualized outlays in 1960, and close to one-third in 1970. Male full-time undergraduates covered less than two-fifths of the annualized outlays in 1960 and 44 percent in 1970.

Reasons for the increase in the role of earnings. Full-time undergraduates covered a higher proportion of college costs out of earnings because, in 1970, more students chose lower-cost educational settings. Thus, the proportion of single students enrolled in public schools increased at the expense of those enrolled in higher-cost private schools; a higher proportion of students continued living with their families rather than on campus or in private nonfamily housing. Despite the trend toward attendance at lower-cost schools, average tuition increased 80 percent, and the total outlay of students increased some 41 percent in current dollars during the 10 years. Student living costs, excluding tuition and books, grew some 29 percent in current dollars. During the same period, the average consumption in the U.S., measured in the same terms, increased by a full two-thirds. In terms of constant prices, student living expenses did not change significantly between 1960 and 1970. In other words, the rising affluence of the U.S. population was not translated into higher living standards for the average student during this period.

Student earnings and patterns of outlays. There are no data to trace how different levels of student earnings affect expenditure patterns of students. The social and economic composition of the student population has changed dramatically in the past 5 years, with students from lower-income families comprising an increasing proportion of all undergraduates. The sources of support for most students have also changed. For instance, borrowing to finance postsecondary studies has greatly increased. Since the individual responses from 1952 and 1960 surveys were not available, it was impossible to reclassify the data to make it comparable to information collected for the ACT study in 1972.[1]

A cross-sectional analysis of data from the 1972 survey attempted to trace the effect of student earnings upon (1) the total outlays of students, (2) their outlays after scholarship grants, (3) tuition paid net of grants, (4) parental contributions, and (5) actual parental contributions less parental contributions set by financial aid officers. The many regressions run to establish these relationships underlined the following facts. (1) There is no clear-cut statistical relationship between student expenditures and earnings; the R^2 of these two variables was not significant, amounting to between 0 and 7 percent. (2) The low correlations could be expected because the variability of student earnings was as high in this survey as in all previous surveys. (3) Attempts to reduce the variability of student earnings from the regression, by eliminating students who earned less than $50 and more than $2,000 and

[1] See W. W. McMahon and A. P. Wagner, *A Study of the College Investment Decision*, Research Report No. 59 (Iowa City, Iowa: The American College Testing Program, 1973). The study reports the budgets of 2,313 full-time undergraduates during 1972/73.

limiting the analysis to students in publicly controlled institutions, were not successful and did not improve the standard errors or the regression results significantly.

The variety of educational settings and the differing life-styles which similarly situated students choose make it impossible to predict how student earnings are likely to be spent. On the other hand, if mean values of the survey are indicative, student earnings do tend to raise the living standards of students somewhat (probably 1 dollar in 5 goes to increases in student outlays), and to reduce parental contributions by probably 1 dollar in 10. It is plausible that the principal trade-off for student earnings is borrowing to finance postsecondary education.

Importance of student earnings in financing education. The absence of clear-cut statistical relationships should not obscure the importance of student earnings in the total financing picture. For instance, our estimates indicate that commuter students earn as much as half of their total outlays, and it is probable that students in junior colleges earn an even higher proportion of their keep.

As a general rule, students in public and private institutions earn the same amount of money, but those in private institutions are likely to have higher expenses and hence contribute a smaller proportion of their expenses.

Students from lower income groups spend less and earn less than do students who come from more affluent households. One can derive these conclusions independently from two sources: the tabulations of students living at home, stratified by income level based on the decennial census; and special tabulations from the 1972 survey of student expenditures. In general, students from poor households contribute roughly one-half as much to their term-time expenses as students from rich households in terms of dollars, but roughly the same proportion in terms of total expense.

In all income groups, student earnings exceed average parental contributions, judging from the results of the 1972 ACT survey. The importance of student earnings in financing student education in both public and private schools, among poor, middle-class, and better-off households has been conclusively documented.

Recent developments. With student earnings amounting to as much as $5 or $6 billion a year, the recent drop in earnings reported by the Current Population Survey is a cause for concern. Between 1969 and 1972, the mean earnings of students declined in both current and constant dollars. In 1973, they picked up again, reaching a level in constant dollars no higher than that in 1969. Our analysis indicates that the failure of student earnings to rise stems from the difficulty which students have encountered in finding

summer jobs and the probable shortening of available hours of work for those who work during the year. Recent statistics indicate no discouragement or evidence of lower labor force participation rates of students during the school year, but show that an increasing proportion of students, one which fluctuates with the general level of unemployment, work fewer weeks during the year.

This trend must be viewed with alarm, especially in the light of the recently increasing overall weakening of the labor market. We believe that the earnings of students from poorer families (which have increased faster than those of all students, but are still lower than the average) are less exposed to adverse economic conditions than the earnings of students with somewhat better-off parents whose income is still below the national mean. A very large part, probably as high as one-half, of the total earnings of students from poor families comes from federal programs, while students in the next quartile receive only a sixth of their total earnings from this source. Recent statistics which indicate a declining share of enrollment for this latter group give additional grounds for concern about the economic welfare and earning prospects of full-time students from the lower middle class.

Policy alternatives. It is not clear what the federal government ought to or can do in the short run to affect student earnings. Subsidies to public employers to employ students are not likely to be popular if they reduce the employment opportunities of other workers. In a recessionary period, it is unlikely that either the nonprofit or public sector will expand its scope and hire additional workers. More likely, these subsidized workers would displace older, unsubsidized workers. This would be an undesirable development. Perhaps it could be possible to integrate federal grant policies with the vagaries of the business cycle.

An oft-heard suggestion is to hire students, especially in the summer, to perform delayed maintenance on public buildings, particularly if special funds for this purpose are made available at low cost by the federal authorities. Special public works for students are believed by the present writers to be impractical, however, as long as relief to unemployed and underemployed construction workers is not forthcoming.

In the long run, federal authorities should give serious attention to postsecondary placement networks for both term-time and summer. Institutions that enroll the vast majority of postsecondary students have access to sophisticated data processing equipment networks which, perhaps, could be made available to student cooperatives concerned with placement. Some exploratory grants for this purpose might be appropriate.

The concern that even middle-class families may no longer be able to afford the cost of postsecondary education puts the issue of encouraging student earnings on center stage again. It is incumbent upon federal policy makers to improve the operation of the part-time labor market for students during the academic year and, even more important, to take steps to rationalize the job search for students who seek employment during the summer.

TABLE A

Statistical Highlights of the Study

Average Earnings

	1959			1969		
	Male	Female	Total	Male	Female	Total
Married	$1,867	$515	$1,327	$2,885	$899	$1,834
Other Marital Status	802	378	623	1,259	738	1,021
Commuter	784	426	645	1,247	783	1,041
Resident	814	351	610	1,279	705	1,006
Total	922	393	714	1,441	761	1,128

Percent of Annualized Costs Covered by Student Earnings

	1960			1970		
	Male	Female	Total	Male	Female	Total
Married	31.7	8.0	21.6	40.1	8.3	19.8
Other Marital Status	37.6	19.7	30.5	45.0	32.2	39.5
Commuter	43.1	29.6	38.4	51.0	41.2	46.5
Resident	34.7	16.0	26.8	40.9	25.1	34.7
Total	36.0	16.4	28.7	43.7	30.0	37.9

Distribution of Full-Time Undergraduates by Marital Status and Residence (percent of total)

	1960			1970		
	Male	Female	Total	Male	Female	Total
Married	11.3	10.5	11.0	11.2	14.3	12.6
Other Marital Status	88.7	89.5	89.0	88.8	85.7	87.4
Commuter	36.0	31.7	34.3	41.5	37.5	39.9
Resident	52.7	57.8	54.7	47.3	48.2	47.5

TRENDS IN THE SOURCES OF STUDENT SUPPORT FOR POSTSECONDARY EDUCATION

This study is designed to (1) review what is known about the earnings of full-time undergraduate students, (2) evaluate the role of student earnings in financing postsecondary expenditures of full-time undergraduate students, and (3) attempt to describe the effect of earnings upon patterns of student outlays.

Surveys of Student Finances

At least four national surveys of sources of financing of undergraduate postsecondary education have been conducted during the past 20 years.[2] The earliest dates from 1952 and the latest was conducted in 1972.

The results of all of these surveys have documented the importance of student earnings in financing college costs. In 1952, the U.S. Office of Education estimated that 28 percent of student outlays was paid through either summer or term-time earnings. The 1960 study estimated the share of earnings at 23 percent of student outlays, and the 1971/72 study at 30

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[2] Ernest V. Hollis and Associates, *Costs of Attending College*, Bulletin 1959, No. 9, U.S. Department of Health, Education, and Welfare, Office of Education (Washington: Government Printing Office, 1957). It is based on a survey of some 15,000 students during 1952/53.

John B. Lansing, Thomas Lorimer, and Chikashi Moriguchi, *How People Pay for College* (Ann Arbor: The University of Michigan, Survey Research Center, Institute for Social Research, 1960). The findings are based on 232 unmarried college students in 1960.

Elizabeth W. Haven and Dwight H. Horch, *How College Students Finance Their Education: A National Survey of Educational Interests, Aspirations and Finances of College Sophomores in 1969-70* (Princeton, N.J.: College Scholarship Service of the College Entrance Examination Board, 1972). The findings are based on 2,400 questionnaires of full-time single students.

W. W. McMahon and A. P. Wagner, *A Study of the College Investment Decision*, Research Report No. 59 (Iowa City, Iowa: The American College Testing Program, 1973). The study reports the budgets of 2,313 full-time undergraduates during 1972/73.

percent. The 1969/70 survey is more difficult to interpret. Term-time earnings were reported to have financed 15.8 percent of outlays, close to the level reported in the 1952 survey, but the contribution of summer earnings to the term-time expenses was never published. If the full summer earnings were used to finance school-year costs, as much as two-fifths of the undergraduate student outlays was contributed by earnings to the cost of education. (See Table 1.) Given the difference in sample size between one survey and the next and the probable error in responses, no firm conclusion can be reached for the period 1952 to 1972 about the trend in student earnings as a proportion of undergraduate outlay.

All four surveys confirm the prevalence of work by full-time undergraduate students. The 1952 survey implies that quite a high percentage of students had earned some money towards paying college costs. Roughly, 6 out of 10 students were employed during the year, and another third, possibly overlapping, had summer earnings. The 1969/70 survey estimated that 64.9 percent of students held term-time jobs, and some 79.8 percent had summer employment.

The 1952 and 1969/70 studies reported earnings and participation rates of students separately for males and females, and highlighted both the higher earnings and labor force participation rate of males compared to females. For instance, in 1952 male term-time earnings were $486 per working student; or with 68.6 percent participation rate, $333 per average student. This contrasted with $265 per female who worked, amounting to $138 per average student, with only 52.0 percent of all women full-time undergraduates working. Summer earnings and participation rate were also higher for males than females, $289 and $269 in earnings for those reporting earnings, or $150 per average male student and $84 per female student.

Between the 1952 and 1969/70 surveys, the term-time male labor force participation rate was unchanged, while the female participation rate increased. In 1970, the $712 term-time earnings per male worker averaged $485 per student, and in 1969, the $388 per female working student equalled $241 per average woman undergraduate. In 1952, the average female student earned 41 percent of her male counterpart's earnings from term-time jobs, and in 1969/70, 50 percent. The relationship of summer earnings for the average male and female did not change drastically, as 89 percent of the men and 71 percent of the women reported summer earnings of $869 and $538, respectively. The ratio of male earnings of $773 to $383 for females is also roughly two to one. The contribution of total earnings to term-time expenses in 1969/70 is, unfortunately, unknown.[3]

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[3]Hollis, *Costs of Attending College*, p. 48. Haven, *How College Students Finance Their Education*, pp. 15, 18.

Current Population Survey Estimates

In March each year, the U.S. Bureau of the Census Current Population Survey collects statistics on earnings during the previous year of persons age 16 to 24 whose principal activity is attending school. Unpublished tabulations further break down earnings by 2-year age groups. Some judgment about trends in earnings of college students can be derived from these data because some 87 percent of the men and 89 percent of the women over age 18 are college students.[4] The reanalysis of these tabulations for the period 1969 through 1973 appears in Table 2.

In 1969, for instance, the average earnings of students with work experience were estimated to be $1,126 for men and $747 for women. Between 1969 and 1972, the income of men who worked remained relatively steady throughout, and rose 14 percent in 1973. Income for women declined between 1969 and 1971, and increased 22 percent in 1973. The number of students reporting earnings declined during the period 1969 through 1972 as well.

These income and labor force participation rates must be treated with caution. In the first place, they include high school students with presumably lower earnings and possibly lower participation rates. In the second place, the CPS definition of full-time student is somewhat different from that adopted by most institutions. The Census considers students full time if they take 12 credits or more; most institutions require 15 credit hours for full-time status. A comparison of figures reported by the Census and by institutions suggests that roughly 10 percent of all students counted by the Census as full-time students are listed as part time by institutions.

An adjustment to earnings figures was made by assuming that the 18- and 19-year-olds in high school have earnings like those who are 16 and 17 and are predominantly high school students. New estimates for earnings of college students, which are some 8 to 10 percent higher than those estimated by the CPS, are shown in Table 3.[5]

A comparison of earnings from the CPS for 1969 and those from the Haven and Horch survey indicate that the CPS labor force participation figures are lower for all college students than they are for sophomores. Since the CPS should include older students as well as married students, who more

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[4]Cf. Kopp Michelotti, *Employment of School Age Youth October 1972*, Special Labor Force Report 158 (Washington: U.S. Department of Labor, Bureau of Labor Statistics, 1973), Table B, p. A-10.

[5]Unpublished tabulations, March CPS Survey.

commonly tend to work, one is left in a quandary. Who is right and who is wrong?

The 1960 and 1970 Censuses Compared

Because of the frailness of conclusions based on available sample surveys, a special analysis of the public use sample of the 1960 and 1970 censuses was undertaken to estimate student earnings. Use of the decennial census has a number of advantages and presents a number of problems. The advantages are: (1) the number of observations is roughly 25 thousand in 1960 and 90 thousand in 1970, and greatly exceeds the number in any survey cited above; (2) it is possible to derive estimates of earnings for both married and single students; (3) data for both 1960 and 1970 are comparable because they were collected and processed under similar circumstances; (4) although the variability (standard deviations) of student earnings collected by the census is quite high, the large samples allow one to (a) have more confidence in the estimates of the mean, and (b) confirm the findings of other studies which imply that student earnings vary a great deal. (See Appendix Table 1.)

There are two principal shortcomings of the census data. First, the census does not distinguish full-time from part-time students and assumptions must be made about full-time and part-time status. Second, students' outlays are not collected by the census, and other sources have to be used to estimate outlays of single students. Those of married students can be estimated by examining the total household incomes.

Estimates of full-time students. In this study, students were classified as part time or full time on the basis of number of hours worked during the census week. It was assumed that the students who worked the most hours were most likely to be part-time students. Men who worked more than 30 hours a week were classified as part-time students. Those working fewer than 30 hours were assumed to attend school full time. This classification produced equal proportions of full-time to total undergraduate students in census and USOE fall enrollment estimates. In the case of women, the earnings of those with fewer than 30 hours of work in the census week were also used as typical of full-time students, but the number of women full-time undergraduates was adjusted to take into consideration (1) that not all, but only 85 percent of all part-time women students could be expected to be in the labor force, and (2) that among those in the labor force, only 80 percent could be expected to work full time. The estimates of labor force participation and the distribution between full- and part-time women is based on October 1970 Current Population Reports of labor force participation of

female part-time college students.[6] (See Table 4.) The full-year labor force participation rates of 86 and 73 percent for men and women respectively are very close to those estimated by Haven and Horch for 1969/70. (See Table 5.) This was a further test of the reasonableness of the allocation procedure.

The same procedures were used to allocate students to full- and part-time status in 1960. The allocation was tested by comparing it to the proportion of single students living at home and away from home in the 1960 student survey. This survey cited a figure of 65 percent for students living away from home as did the census sample.[7]

Characteristics of full-time undergraduates. Further tests were made of the credibility of the estimates by comparing the characteristics of all students in the sample, and especially those of full-time undergraduates. Most of the tests indicated that the allocation of full-time students was reasonable. Thus, the distribution of undergraduates by age was consistent from 1960 to 1970. Intuitively acceptable and in line with other USOE results was the growing proportion of full-time women among female undergraduates. (See Table 6.) The ratio of single students living at home to those living elsewhere also moved in the right direction, reflecting the increased popularity of community colleges.

It is significant that most surveys ignore those who are married, roughly 10 percent of the total full-time undergraduate population in 1960 and 12 percent in 1970. The census makes it possible to make a number of judgments about characteristics of married students. (See Table 7.)

Earnings of students. The earnings of students were calculated (1) for those who were working over 30 hours per week and who were predominantly part-time students, and (2) for all students who were working fewer than 30 hours a week during the census week and who, in the case of males, were exclusively full-time students. In the case of females, it was assumed that 68 percent of all part-time students were in the labor force full time (see above), and that a number equivalent to 47 percent of this number had to be

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[6]Howard Hayghe, *Employment of School-Age Youth*, Special Labor Force Report 135 (Washington: U.S. Department of Labor, Bureau of Labor Statistics, 1971). This article indicates that (1) some part-time female students did not work, and (2) others worked part time. Proportions derived from the survey were subtracted from decennnial census estimates to derive estimates of full-time students.

[7]Lansing, et al., *How People Pay for College*, p. 19.

subtracted from the total part-time students. This number was equivalent in 1960 to 10 percent and in 1970 to 7 percent of all students working fewer than 30 hours during the census week.

Part-time undergraduate students earn as much as other workers with the same education. (See Table 8.) It is encouraging that they do not suffer a penalty in earnings because they are enrolled in college part time.

The earnings of full-time students are only a fraction of those of part-time students. They were $714 in 1959 and $1,128 in 1969. As a rule, (1) married male students earned two and one-third times as much as unmarried male students in both periods; (2) the single male students earned more than single or married female students; (3) commuters and students living away from home earned practically the same amount. (See Table 9.)

It is noteworthy that between 1959 and 1969, average earnings of women nearly doubled, while those of men increased 56 percent. Part of that rise is due to increased labor force participation rates of women compared to men, and part to the faster growth of their earnings.

The earnings of students computed from census records are considerably higher than those derived from either the sample surveys for 1960 and 1969/70 or the CPS. In the case of the later survey, this is not surprising because the results of the 1969/70 survey are based on single students who were sophomores, usually age 19. Students 18 and 19 generally earned only 87 percent of the average earnings of all college males and females according to the CPS. With this adjustment, the two figures, 1969/70 survey and census, are compatible.[8] By contrast, estimates of total earnings from CPS and census cannot be reconciled as easily. Either the labor participation rates calculated by the CPS are too low or earnings are underreported, or both. We suspect that both are on the low side. It is quite possible that married persons were not counted as students by interviewers, especially if they had a strong attachment to the labor force. This omission would raise the labor participation rate to 87.8 percent for males and earnings per male student to $1,089. In the case of women, the labor participation rate would go up to the expected 73 percent, and earnings per average female student to $672. These earnings are 24 and 12 percent, respectively, below the levels estimated by the 1970 census, and may very well be the earnings after tax withholding as reported by respondents.

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[8]The comparable figures, on a common base, are $1,254 from the decennial census and $1,294 from the Current Population Survey for males, and $662 and $647 for females, respectively.

The census estimates of earnings cannot be reconciled with the estimates of the 1960 survey.[9] In that survey, the mean earnings of single students are $360 versus the census estimate of $642, and the labor participation rate is 43 percent, roughly half that reported by the census. The only consolation to the skeptical is that the census estimate, based on 25 thousand observations, is within one standard error of the 1960 survey based on 232 interviews. This standard deviation of earnings in that survey is 1.4 times the mean!

Estimated total earnings. According to the census, full-time students earned $1.2 billion in 1960, and $5.8 billion in 1970. Total earnings of all students rose from $4.7 to $15.2 billion. (See Table 10.) These amounts were calculated by multiplying estimated earnings per student by the appropriate categories of students listed in USOE opening fall enrollment statistics. The total earnings of full-time students increased nearly fivefold between the two periods as the average earnings per student rose by more than one-half and the number of students trebled. Notably, female earnings increased by more than a factor of six, while those of men grew only three and a half times.

Both the growing affluence of the population and the increased availability of student aid increased the proportion of full-time students as a percentage of total students, and hence served to reduce the share of part-time student earnings in the total income of persons attending postsecondary institutions. While the earnings of part-time students still accounted for the lion's share of all earnings of students, their importance decreased from nearly 75 percent of the total in 1960 to 60 percent in 1970.

To put student earnings into perspective, it may be well to point out that the earnings of full-time students in 1960 amounted to less than one-third of one percent of personal income, and in 1969, their share hardly reached one percent of the total.

Contribution of college students' earnings to school outlays. While most surveys which inquire about student earnings report only that part, if any, of summer earnings which is contributed to school year expenses, the earnings reported by the census include both term-time and summer proceeds of jobs. Obviously, only part of the summer earnings will be available to defray term-time expenses. Table 11 shows term-time expenses and an estimate of year-round expenses, as well as the share of earnings as a percent of annual expenses.

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[9]Lansing, et al., *How People Pay for College*, p. 21.

The estimated annual expenses were derived in the following manner.

1. Estimated cost of tuition and books was subtracted from annual outlays of commuter and other students.[10]

2. The nontuition portion of outlays was annualized (on the assumption that term-time expenses were incurred over 8 months) by adding 4 months subsistence and other costs to all estimated outlays of single college students.

3. The total household expenditures of married students were assumed to be equal to their income.

4. Estimates of total outlays for all full-time undergraduates were derived by applying weights by sex derived from the census.

The results of the analysis of census records indicate that the share of annualized expenses of single male students covered by earnings increased from 38 to 45 percent of the total between 1960 and 1970. In the case of married male students, estimated earnings amounted to slightly less than a third of the households' incomes in 1960 and two-fifths in 1970. While single women full-time students still earned a smaller share of the annualized expenses than men in 1970, 32 percent of annualized expenses, their earnings increased faster as a percent of annualized expenses, i.e., by a full 63 percent. In the case of married women who studied full time, their share of earnings in total household income hardly increased at all despite the fact that the absolute amount of earnings did increase by 75 percent between 1960 and 1970.

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[10]Commuter and other costs were derived for 1960 on the basis of a statement that commuters' costs were $420 less than those of others (Lansing, et al., p. 17). With an average cost of $1,550 and proportions of commuters and residents given, it was possible to solve algebraically to derive estimates of commuter outlays of $1,292 and resident outlays of $1,712. Estimated tuition for the two groups was derived by weighing the proportion of residents and commuters by enrollment in private and public schools by the average tuition given in *Projections of Educational Statistics to 1977/78*, DHEW, USOE (Washington: Government Printing Office, 1968), Table 49, p. 98. This amount was increased by 22 percent for fees, books, and supplies derived from special tabulations from The American College Testing Program. The residual was annualized as stated in the text. Male and female outlays were further scaled in proportion to outlays in the 1969/70 survey.

For 1969/70, Haven and Horch estimates for tuition, fees, books, and supplies were used. These costs amounted to 44 percent of total expense for commuters and 42 percent for others.

The other noteworthy facts displayed in Table 11 are: (1) single, commuter, full-time students' earnings in 1970 equaled 51 percent of estimated expenses for males and 41 percent for females, and (2) 41 percent of expenses of males attending school full time and living away from home was covered by earnings; only a quarter of expenses of females in similar circumstances was estimated to come from their work.

The estimates of earnings contributed to term-time expenses were derived in a complex and somewhat arbitrary fashion. The 1969/70 Haven and Horch survey provided estimates of term-time and summer student earnings. The ACT McMahon and Wagner study was reanalyzed (see below) and the figures for term-time earnings and contributions from summer earnings compiled. Although the studies were made 2 years apart, the estimates for term-time earnings are fairly close, and it is fair to assume that summer earnings per student would not be very different either. This assumption can be buttressed by the earning trends of students described in the section dealing with the CPS. On the basis of these assumptions, it was possible to calculate that $345 per full-time single male student was *not* contributed to term-time earnings, and that women spent, and did *not* contribute, $143 of their summer earnings. In 1970, these amounts were 26 percent of male and 18 percent of female estimated total single students' earnings. The actual dollar amounts withheld were subtracted from 1970 census estimate of earnings to derive the amount contributed to term-time expenses.

For 1960, the male earnings were reduced by 26 percent and the female earnings by 18 percent, the same proportion as in 1970, to derive term-time earnings for male and female, single, full-time students. The amounts subtracted were $213 for males and $69 for females. It was then possible to compare the estimates of ratios of term-time contributions between 1960 and 1970. If this methodology is accurate, male earnings contributed 38 percent of all term-time expenses in 1960 and 43 percent in 1970; for women, the share went up from 21 to 32 percent. All single students covered 31 percent of their outlay in 1960 and 38 percent in 1970. (See Table 12.)

Analysis of Trends in Earnings

During the 1960s, a massive federal effort to enroll students from lower income families was underway. One could expect that students from poor families would be more likely to work than children of rich parents. It seemed reasonable then to expect that college students would contribute more to the cost of education in 1970 than in 1960 because a higher proportion of students during the later period were likely to have parents with lower than average incomes. This hypothesis is not supported by facts.

For instance, labor force participation rates of full-time students attending public and private schools were virtually indistinguishable in both 1960 and 1970. The levels of earnings in each type of school were very close to each other as well. On the average, single, full-time males in private schools earned 8 percent less than students in public schools in 1960, and some 6 percent less in 1970. The earnings of single female and married, full-time students were practically identical in both types of schools in 1960 and 1970. (See Table 13.)

A comparison of labor force participation rates of commuter and married students for whom family income was reported, displayed in Table 14, indicates that propensity to work was highest among commuter students in the upper half of the income distribution in both 1960 and 1970. In both periods, practically all married male students worked. In the 1960s, labor force participation rates for female full-time students declined at both ends of the income distribution. By 1970, female commuter students in the upper income brackets were as likely to work as those from families in the middle income range, and married women in high income households were more likely to work than those in poor households (See Table 14.)

Earnings of commuter students in lower income households were very much less than earnings of students who lived in high income households. In 1960, single male commuter students in households with less than $3,000 total income had average earnings of $609, roughly half the $1,148 earnings for the same type of students in households with incomes over $10,000. In 1970, this gap was reduced as earnings of students in households with comparable incomes (i.e., less than $4,000) were $1.148, 77 percent of the earnings of students from richer households (with incomes over $15,000). The gap in earnings between female students from similarly defined low and high income households was narrowed from 83 percent in 1960 to 46 percent in 1970. (See Table 15.)

The increase in students' earnings between the two periods was mostly due to two causes, longer hours and higher hourly wages. There is some evidence that students worked longer hours. During the census week, the proportion of students working fewer than 15 hours declined from 60 to 50 percent between 1960 and 1970. (See Table 16.) By contrast, the distribution of full-time students by the number of weeks worked hardly changed between 1960 and 1970. The proportion working 14 weeks or less decreased insignificantly from 46 percent in the 1960 census to 42 percent in the 1970 enumeration. The proportion of students working the full year scarcely changed from one decade to the next. During the 10 years, average nonagricultural wages increased some 50 percent.[11] With students probably

[11] U.S. Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States: 1971* (Washington: Author, 1971), Table 355, p. 226.

working longer hours and the same number of weeks, one is forced to conclude that student hourly earnings did not grow as fast as all earnings. (See Table 17.)

The ability of students to cover a higher proportion of the total college cost out of earnings must be explained for male, full-time undergraduates as follows. (1) Increasing proportions of students chose cheaper educational settings, i.e., public or commuter rather than private or residential post-secondary institutions. (2) Those with low incomes increased their earnings more than the rest of the students. In the case of women, both these reasons apply. In addition, earnings played a bigger role in financing the education of female, full-time undergraduates as their labor force participation rates increased.

The Effect of Earnings on Student Expenditure Patterns

The pervasiveness and the volume of student earnings would lead one to expect that the effect of student earnings upon expenditure patterns would be quite discernible and would be easy to trace. Questions such as the following could then be answered:

1. Do students who earn more, spend more?

2. Are earnings likely to relieve parents of the need to support students?

3. Are there any differences in spending patterns among students who work?

4. Are earnings likely to pay for higher tuition?

At first blush, it is surprising that these questions have not been answered already. Both the 1960 Lansing study and the 1969/70 Haven and Horch study are fairly sophisticated efforts, and one would have expected researchers to tackle such obvious questions. For this research effort, we tried to analyze the results of the 1971/72 ACT study and understand why previous budget studies limited themselves to simple illustrative tabulations of results.

A survey of 2,200 students conducted by The American College Testing Program was used to establish these trends. This survey of students enrolled in the fall of 1972 elicited the amount spent in total for tuition, books, room and board, durables and travel, and other miscellaneous expenditures. Because the students were picked from a universe of persons who had taken the ACT Assessment, additional information was available

about their college aptitude scores. The parents of the students were asked to report their own earnings, which were integrated with the information on the student questionnaire.

The ACT study had some significant advantages over other studies of student finances. It collected information about actual, rather than anticipated, student outlays and, more important, ascertained income data directly from the parents of students and not from student estimates of parental income.

The most significant shortcoming of the study is that the chosen sample is not representative of the student universe as of 1972. Because the clients of The American College Testing Program are predominantly in state schools, enrollment in private schools is thus underrepresented. The majority of junior and 2-year college students are not likely to take the ACT Assessment and thus this category is also underrepresented in the sample. It should be noted that the 1970 study sample was not representative of the full-time student enrollment either. The average term-time expense per student is estimated by the study at $2,485; when reweighted by nationally representative enrollments, it is $2,263.

In order to make the ACT 1972 sample representative and to make it conform more closely with the national estimates, the observations were also reweighted by type of institution and by income of students. The distribution of the sample, after it had been reweighted, and the expected weights appear in Table 18. This table shows that the observations analyzed below are close to being representative of the national composition of full-time undergraduate students. The mean expenditures estimated by this newly weighted sample are $2,638 per student.

The mean values for most variables, either for the whole sample or for the sample broken down by income quartiles, make intuitively good sense. Thus, student expenditures net of grants increase from the low income quartile level of $1,678 to $1,877 for the next quartile, and peak at the highest income quartile for an average of $2,567. Tuition after grants, expenditures on durables and travel, and parental contribution also increase on the average with the mean income of the household. (See Table 19.)

A special tabulation of these variables, by level of student earnings contributed to term-time expense, shows that students who earn more generally spend much more, and that in many cases earnings go to finance consumer durables and travel. The relationship between average earnings and tuition expenditure is just not there. By contrast, parental contributions are lower in the cases where students earn more money.

As attractive as these results are, and as intuitively reasonable as they appear, they are not statistically significant. The variation of mean total expenditures after grants, durable expenses, tuition after grants, and parental contributions in each group is very great. The standard deviations of the observations often exceed the mean, and thus cause considerable doubt that reported means are significant. In other words, it is quite possible that another sample drawn from the same population could have resulted in the publication of means quite different from those reported in Table 19.

If the results of the survey are at all representative, they indicate that higher earnings (say the extra $500 earned by students in the two groups with earnings of $250-$750 and $750-$1,250) generally resulted in both small increases in student outlay, less than 20 percent of the incremental earnings, and some declines in parental contributions, most pronounced at both ends of the spectrum, for the very poor and very rich. In the light of the above developments, one could conclude that students who earned less depended more heavily upon loans or other sources of financing, such as Social Security or veterans benefits, than students who earned more.

In retrospect, our attempts to tease out the effects of student earnings upon patterns of student expenditures remind one of the quest for the Holy Grail. Hundreds of correlations were run with the ACT sample being partitioned in the following way: (1) all observations, (2) all observations partitioned by sex, (3) observations partitioned by income quartiles, (4) observations partitioned by income quartiles and sex, (5) observations partitioned by public and private institutions, (6) observations partitioned by public and private institutions and by sex, (7) special runs of truncated earning distributions, excluding students with earnings less than $50 and more than $2,000 for public universities and public 4-year schools, partitioned by sex.

Numerous stepwise regressions were run to explain (1) total expenditures, (2) expenditures net of grants, (3) total tuition payments, (4) tuition payments net of grants, (5) room and board outlays, (6) outlays on durables and travel, (7) other miscellaneous expenditures, (8) actual parental contributions, (9) actual parental contributions less contributions expected by student aid formulas. An attempt to produce superior explanatory equations was made by including dummy variables in all equations to differentiate students by ability, income of parents (when appropriate), type of living accommodations, type of school attended, etc. A summary stepwise regression using student earnings as the dependent variable was also run.

The results of these regressions are not reproduced in this report. They would just clutter the exposition unnecessarily. In most cases, student earnings did not account for any significant portion of, say, total expenditure net of grants, with the square of the regression coefficient being equal to between 0 and 7 percent in most cases. Only in the case of male students

for the truncated observations in public 4-year institutions was the far from impressive R^2 of .13 recorded. We just cannot pay that much attention to this one result.

While the details of the runs are fascinating to analyze, they bear very little relationship to the subject of the report. Table 20 reproduces the results for a number of runs of the equation which explains the magnitude of student earnings. Purists will be encouraged that the sign on the coefficient of parental earnings is negative, as expected. We were pleased that the signs for high income students were also positive, since we asserted earlier in the report that students from richer households earn more money than students in poor households. Apart from that, it does not appear that statistical relationships can be established, at least based on existing samples.

The disappointing results of the regression did not come as a complete surprise. One of the principal statistical reasons for the low correlation coefficients is the high variability of student earnings. Within each income quartile, even when the sample is partitioned by sex, the standard deviation of earnings is at least as great as the mean. Under these circumstances, low regression coefficients are to be expected.

In other instances, the low correlation between tuition and earnings is to be expected and is due to the fact that junior college students who pay the least amount in tuition are the ones who earn the most money. Also, their parents, irrespective of their level of income, contribute less to their support.

The disappointing results of the analysis of the total student universe suggest the great variety of educational choices in the postsecondary sector made by students who look alike on all objective criteria. The difficulty in explaining outlays after such qualitative factors as ability scores were taken into consideration just reemphasizes that students of a given ability level and with given parental resources are likely to choose vastly differing educational settings. The patterns of choices, especially net of subsidies, need to be investigated in greater detail, since such study may throw considerable light on the impact of alternative federal policies for student support.

Such analyses lie beyond the limited scope of this report. The results of the regression equations which have been run so far do have some policy implications, even though these implications are negative. We can conclude that incremental earnings of students are not likely to be spent in any uniform manner, so that, for instance, additional opportunities for students to earn and learn are not likely to be translated into willingness to pay more tuition, or spend more on room and board, or even buy more stereos and take trips. Some money will be spent on all these objectives, but one can say with a fair amount of certainty that the cause and effect consequences of

student earnings on any item of student expenditure are weak. Hence, if the federal government wishes to encourage enrollment in a given type of institution, it ought to pick other incentives to achieve this task. One can also conclude, if one has the courage to trust mean values from small samples, that student earnings and loans are probably substituted for each other by students with similar expenditure patterns.

Policy Implications in the Light of Recent Developments

This study has documented the importance of student earnings in financing postsecondary education. We estimate that the proportion of term-time expenses covered by earnings for all undergraduates increased from 31 to 38 percent between 1960 and 1970. The percentage of annualized expenses covered by student earnings increased from 29 to 40 percent, roughly in the same proportion as that of term expenses.

The proportion of annualized expenses covered was highest for men in public schools, where as much as 59 percent of the total outlay was covered by earnings. Men in private schools covered only roughly half that proportion of expenses through earnings. The difference in the importance of earnings in total annual outlays was even more striking among women attending different types of schools. We estimate that women in public institutions covered half of their annualized outlays through earnings, while women in private institutions earned less than two-fifths of their annualized expenses.

With these high proportions of student costs being covered by earnings, especially in public schools which typically enroll students from families of more modest means, the opportunities to earn while attending school deserve considerable attention from the federal policy maker. It is important to keep in mind that the financing of term-time expenses from earnings probably comes equally from term-time and summer earnings.

It is precisely in this connection that the latest statistics collected as part of the Current Population Survey present a disquieting trend and the deductions drawn from these statistics portend a somber future. Between 1969 and 1972, absolute dollar amounts of student earnings declined. In 1973, student earnings did recover but, if they are deflated by the hourly wage index, they were no higher in 1973 than in 1969.

These declines in absolute amounts, or earnings in constant wage units, do not appear to have been caused by lessened propensities of students to work. The labor force participation rates of students during the term,

approximated in Table 21 by statistics for October of different years, has remained close to 40 percent of all full-time students during the past 5 years. The small annual differences are probably not particularly significant and are within the standard error of the sample. There is good reason to believe that the higher teenage unemployment of the past few years has also affected the ability of students to find and hold jobs. The proportion of students who worked less than 13 weeks during the year peaked in the years when the unemployment of teenagers was high. (See Table 21.)

A 1969 study of summer earnings of young workers by the U.S. Department of Labor[12] highlighted the fact that the amount of earnings in summer jobs was affected by the length of the job search. As the labor market tightens, the length of time needed to find a summer job is likely to increase, and the length of time spent in the labor force for the total year is likely to decline. The same study documented the greater difficulty of blacks, presumably lower income students, to find jobs, and the higher proportion of disappointed job seekers. Our analysis of the 1970 census also highlighted the lower labor force participation rates of commuter students from lower income families. It would be safe to assume that difficulty in finding jobs for "badly connected" students causes these differences in work experience.

We had occasion to note that the gap in average earnings between students in the lowest income groups and those living with more affluent parents has narrowed between 1960 and 1970. This encouraging trend, we believe, is due mostly to federal initiatives. The work-study program, which contributed $140 million to students from households with low earnings, and another $60 million to students in households with incomes below the mean, is estimated to have contributed roughly one-half of the earnings of lower income students, and of some 10 to 15 percent of students whose parents had incomes between $5,000 and $8,000 in 1969. These estimates, which are admittedly rough, are based on a study conducted by the Bureau of Applied Social Research.

The recent declines in the propensity of children with parents in the second quartile of the income distribution to attend college, documented by the Current Population Survey, give an inkling of the effect of a tight labor market on the chances of sustaining the momentum of democratization of higher education. Students most dependent on earnings from the nongovernment sector and most likely to have the greatest need for outside funds appear to be affected most by scarcity of jobs.

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[12]Vera C. Perrella, *Students and Summer Jobs, October 1969*, Special Labor Force Report 128 (Washington: U.S. Department of Labor, Bureau of Labor Statistics, 1971).

In the immediate future, as in the recent past, as long as total unemployment rates hover around 7 percent and teenage unemployment rates are likely to increase to 20 percent or more, job opportunities for students are likely to be greatly reduced. This, in turn, will affect their total earnings and, given the importance which earnings play in financing total educational outlay, affect their chances of enrolling or staying in school.

The obvious short-run objective of federal policy may very well be to seek to generate jobs for students and, at the same time, not reduce the employment opportunities for the rest of the population. This is a challenge which is not easily met, except by "leaf-raking," totally subsidized projects. If a job needs to be done, generally it will get done. Hence, subsidizing the wage rates of students to make their employment more attractive may reduce the number of jobs open to the rest of the population. Under present circumstances, when real incomes are declining, it is unreasonable to expect state and local authorities to raise taxes to take on additional functions which become attractive as subsidized student labor becomes available. Hence, a general extension of the work-study program is not advocated lest it reduce the total number of jobs in the public sector open to nonstudents.

Perhaps one could be seduced by the prospect of subsidizing through work-study some financially hard-pressed services either in educational institutions or at the municipal level, services which are believed to be socially productive but which are not performed because of the penury of these agencies. For instance, if school districts or higher education institutions delay maintenance of physical plants because of shortages of funds, perhaps they could better utilize what money is available with subsidized student labor. The effect which such subsidies might have on the underemployed construction workers must be balanced against the advantages of encouraging students to enroll and stay in school.

In the long run, the challenges to federal policy in the field of student employment are more clear cut. With practically every student working sometime during the year, and half of the students working during term time, the encouragement of placement services in postsecondary institutions for part-time workers during the school year and the setting up of summer job placement centers for students are clearly in the interest of both the federal government and the postsecondary institutions. Neglect by both these groups of the important role of summer earnings in the financing of students is difficult to understand.

Those postsecondary institutions which enroll the vast majority of students have access to sophisticated data processing installations. A listing of students which includes their experience in different fields of endeavor and their availability, and mutually agreeable rates of pay, could provide a ready reference for employers with temporary or peak requirements. Employers

will never find out about this employee resource unless they are told it exists. A public service campaign, perhaps by the Advertising Council, designed with the help of small federal incentive might help popularize such a service.

A similar approach could be undertaken to find summer jobs for students. Roughly half of all students are commuters who live and attend school in the same area. They could be served by listings available in the institutions they attend. Others would have to depend on cross-listing between educational institutions, the cooperation of the local state employment offices, or, preferably, volunteer organizations of businessmen, such as Junior Chambers of Commerce and social clubs. It is amazing how such a big enterprise, which employs 4 or 5 percent of the labor force each summer, has been allowed to function in a hit-or-miss fashion.

As important as student earnings are in financing the college costs of selected students, a policy of encouraging or discouraging student labor force participation is not likely to have any concentrated effect on any single item of expenditure. The proceeds of student earnings are spent, if present surveys of student budgets are to be trusted, in a great variety of ways. It is not obvious that higher student earnings would relieve parents of their support requirements for children in college, increase the propensity to pay higher tuition, or boost the sales of durables and the travel industry. Earnings are important to different students, even those in similar income brackets, in different ways. The great variety of costs, living arrangements, and tuition levels among students is not understood well enough to make judgments about any particular item of student support's effect on the behavior of those enrolled in the postsecondary sector.

Our lack of understanding of what happens should not be used as an excuse for paying no attention to the trends in student earnings. They loom large, amounting to more than $5 billion for full-time students alone and covering roughly four-tenths of the annualized expenditures of undergraduate students. We believe that our concerns about the difficulties of full-time students in finding work are justified and that additional attention to the organization of this segment of the labor market should be high on the federal agenda.

TABLE 1

Undergraduate Student Earnings Used to Finance Educational Expense

	Percent of Outlay Financed by Total Earnings	Current Dollars per Student		
		Contribution from Total Earnings	Contribution from Summer Earnings	Average Expense
1952	28	$ 385	$137	$1,388
1960	23	360	n.a.	1,550
1969-70	40*	1,003	610*	2,485
1971-72	30	793	428	2,615

*Includes total summer earnings.

Sources. 1952: Ernest V. Hollis and Associates, *Costs of Attending College*, Bulletin 1959, No. 9, U.S. Department of Health, Education, and Welfare, Office of Education (Washington: Government Printing Office, 1962), Table 8, p. 48.

1960: John B. Lansing, Thomas Lorimer, and Chikashi Moriguchi, *How People Pay for College* (Ann Arbor: The University of Michigan, Survey Research Center, 1960).

1969-70: Elizabeth W. Haven and Dwight H. Horch, *How College Students Finance Their Education: A National Survey of the Educational Interests, Aspirations, and Finances of College Sophomores in 1960-70* (Princeton, N.J.: College Scholarship Service of the College Entrance Examination Board, 1972), pp. 14, 15, 18.

1971-72: W. W. McMahon and A. P. Wagner, *A Study of the College Investment Decision*, Research Report No. 59 (Iowa City, Iowa: The American College Testing Program, 1973), and unpublished tabulations.

TABLE 2

Estimated Number and Earnings of Students by Sex, CPS March Survey, 1969-73

	1973	1972	1971	1970	1969
Males 18-24					
Total Number (thousands)	2,515	2,480	2,523	2,640	2,837
Average Income (dollars)	1,352	1,189	1,107	1,133	1,126
Total Income (millions of dollars)	3,400	2,949	2,793	2,991	3,194
Females 18-24					
Number (thousands)	1,867	1,760	1,734	1,868	1,803
Average Income (dollars)	898	737	705	709	747
Total Income (millions of dollars)	1,676	1,297	1,222	1,324	1,347
Total					
Number (thousands)	4,382	4,240	4,257	4,508	4,640
Average Income (dollars)	1,158	1,001	943	957	979
Total Income (millions of dollars)	5,076	4,246	4,015	4,315	4,541
Proportion of Students with Earnings					
Male	.786	.766	.821	.836	n.a.
Female	.768	.750	.797	.851	n.a.
Total	.778	.760	.811	.842	n.a.

Source. Unpublished tabulations, CPS.

TABLE 3

Adjusted Earnings of College Students Based on CPS for 1969-73

	1973	1972	1971	1970	1969
Male					
Number (thousands)	1,998	2,168	2,206	2,299	2,468
Average Earnings (dollars)	1,598	1,292	1,205	1,221	1,240
Total Income (millions)	3,193	2,801	2,658	2,807	3,060
Female					
Number (thousands)	1,688	1,565	1,577	1,681	1,625
Average Earnings (dollars)	951	783	741	750	781
Total Income (millions)	1,605	1,225	1,169	1,261	1,269
Total					
Number (thousands)	3,686	3,733	3,783	3,980	4,093
Average Earnings (dollars)	1,302	1,079	1,012	1,022	1,058
Total Income (millions)	4,798	4,026	3,827	4,068	4,329
Proportion of Students with Earnings					
Male	.624	.670	.718	.728	.841
Female	.694	.667	.724	.766	.809
Total	.654	.669	.720	.744	.828

Source. See Table 2.

TABLE 4

Various Estimates of Proportion of Full-Time Undergraduate Students, 1970 (percent of total undergraduates)

	Male	Female	Total
1969 CPS 16-34	79	76	78
1969 CPS 16-24	90	86	88
1970 Census	74	86	79
1970 USOE Undergraduates	75	72	74
1970 Census Adjusted	74	77	75

Sources. 1969: Results of October CPS. Full-time students are students taking more than 12 credits in college. Special Labor Force Report 124, p. A10.

1970: USOE. Reported by institutions fall enrollment, 1970.

1969: Census 1970. Students working fewer than 30 hours during the census week.

1970 Census Adjusted: The proportion of women considered to be full-time students was reduced by estimating (1) part-time attendance of women not in the labor force, and (2) part-time women workers who were also part-time students based on U.S. Department of Labor, Bureau of Labor Statistics, *Employment of School-Age Youth*, Special Labor Force Report 124 (Washington: Author), p. A10.

TABLE 5

Labor Force Participation of Full-Time Undergraduates (percent in labor force)

	1960	1970
Total	77.8	80.1
Males	85.8	86.2
Females	66.8	73.3

Source. Special tabulations of the U.S. Census, 1960, 1970.

TABLE 6

Total Full-Time Undergraduates by Age and Sex for 1960 and 1970 (percent of total)

	1960	1970
16-24		
Male	59.9	56.4
Female	40.1	43.6
	100.0	100.0
25-34		
Male	67.8	56.5
Female	32.2	43.5
	100.0	100.0
35+		
Male	n.a.	31.2
Female	n.a.	68.8
		100.0
Total		
Male	60.6	55.6
Female	39.4	44.4
	100.0	100.0

Source. Special tabulations of the U.S. Census, 1960, 1970.

TABLE 7

Full-Time Undergraduates by Marital Status and Residence
(percent of total)

Age	1960				1970			
	Married Spouse Present	Other Marital Status		Total	Married Spouse Present	Other Marital Status		Total
		Commuter	Other			Commuter	Other	
Total								
16-24	6.4	35.9	57.7	100.0	7.3	42.5	50.2	100.0
25-34	54.6	19.1	26.3	100.0	63.7	15.3	21.0	100.0
35+	n.a.	n.a.	n.a.	n.a.	63.3	12.6	24.1	100.0
Total	11.0	34.3	54.7	100.0	12.6	39.9	47.5	100.0
Males								
16-24	6.8	37.7	55.5	100.0	7.3	43.6	49.1	100.0
25-34	49.0	21.9	29.1	100.0	54.4	18.1	27.5	100.0
35+	n.a.	n.a.	n.a.	n.a.	54.5	19.6	25.9	100.0
Total	11.3	36.0	52.7	100.0	11.2	41.5	47.3	100.0
Females								
16-24	5.7	33.2	61.1	100.0	7.2	40.8	52.0	100.0
25-34	66.6	13.0	20.4	100.0	78.3	10.9	10.8	100.0
35+	n.a.	n.a.	n.a.	n.a.	68.3	8.6	23.1	100.0
Total	10.5	31.7	57.8	100.0	14.3	37.5	48.2	100.0

Source. Special tabulations of the U.S. Census, 1960, 1970.

TABLE 8

Part-Time Undergraduate Students Working Full-Time Earnings by Sex, Age Group, 1969

	Male	Female
Student Earnings	$5,920	$3,632
All Workers 13-15 Years Education	$6,134	$3,501

Source. Earnings by age and sex weighted to conform to estimates of distribution of students. U.S. Bureau of the Census, *Census of Population: 1970*, Subject Reports, Final Report Pc(2)-5B, "Earnings by Occupation and Education" (Washington: U.S. Government Printing Office, 1973), Tables 1, 5, 7, 11.

TABLE 9

Estimated Total Earnings per Full-Time Undergraduate, 1959 and 1969 (current dollars)

	1959				1969			
		Other Marital Status				Other Marital Status		
Age	Married	Commuter	Other	Total	Married	Commuter	Other	Total
Total								
16-24	1,178	613	580	642	1,748	1,021	964	1,048
25-34	1,491	1,221	1,235	1,398	2,105	1,854	2,102	2,097
35+	n.a.	n.a.	n.a.	n.a.	1,557	1,072	1,315	1,410
All	1,327	645	610	714	1,834	1,041	1,006	1,128
Male								
16-24	1,556	751	779	821	2,405	1,224	1,234	1,313
25-34	2,228	1,258	1,373	1,764	3,544	2,040	2,302	2,914
35+	n.a.	n.a.	n.a.	n.a.	3,837	1,220	1,723	2,625
All	1,867	784	814	922	2,885	1,247	1,279	1,441
Female								
16-24	568	404	337	373	967	769	666	729
25-34	462	1,102	861	630	865	1,467	1,780	1,099
35+	n.a.	n.a.	n.a.	n.a.	814	934	1,128	896
All	515	426	351	393	899	783	705	761

Source: Special tabulations of the U.S. Census, 1960, 1970. Also see Appendix Table 1.

TABLE 10

Estimated Total Earnings of Undergraduate Students
(millions of dollars)

	1960				1970			
	Married	Living at Home	Living Elsewhere	Total	Married	Living at Home	Living Elsewhere	Total
Work Fewer than 30 Hours	278	385	585	1,248	1,219	2,122	2,455	5,796
Work More than 30 Hours	2,143	842	500	3,485	5,929	1,716	1,799	9,444
Total	2,421	1,227	1,085	4,733	7,148	3,838	4,254	15,240
Total			*Fewer than 30 Hours*					
16-24	119	347	531	997	597	2,007	2,259	4,863
25-34	139	38	54	231	464	95	148	707
35+	n.a.	n.a.	n.a.	n.a.	158	20	48	226
Total	278	385	585	1,248	1,219	2,122	2,455	5,796

[Continued]

TABLE 10 [Continued]

Male								
16-24	100	268	408	776	469	1,428	1,620	3,517
25-34	124	31	45	200	371	71	122	564
35+	n.a.	n.a.	n.a.	n.a.	104	12	22	138
Total	224	299	453	976	944	1,511	1,764	4,219
Female								
16-24	19	79	123	221	128	579	639	1,346
25-34	15	7	9	31	93	24	26	143
35+	n.a.	n.a.	n.a.	n.a.	54	8	26	88
Total	34	86	132	252	275	611	691	1,577

Sources. Number of students:

1960: Adapted from *Projections of Educational Statistics to 1977-78*, DHEW, USOE (Washington: Government Printing Office, 1968), p. 21.

1970: Number of students, *USOE Opening Fall Enrollment.*

Earnings: Special tabulations of the U.S. Census. Also see Appendix Table 1.

TABLE 11

Term-Time and Annual Estimated Expenses and Percent of Outlay Covered by Earnings, Full-Time Undergraduates, by Marital Status and Type of Residence

	1960			1970		
	Male	Female	Total	Male	Female	Total
Term-Time Expenses						
Married						
Other Marital Status	$1,600	$1,475	$1,550	$2,260	$2,085	$2,192
Commuter	1,385	1,131	1,292	1,870	1,522	1,730
Other	1,747	1,667	1,712	2,550	2,420	2,526
Annualized Expenses						
Married	$5,900	$6,400	$6,000	$7,200	$10,800	$9,100
Other Marital Status	2,132	1,924	2,048	2,840	2,402	2,669
Commuter	1,820	1,438	1,680	2,445	1,900	2,226
Other	2,345	2,195	2,279	3,125	2,800	3,031
Total	2,558	2,394	2,483	3,090	3,131	3,106
Earnings as Percent of Annual Expenses						
Married	31.7	8.0	21.6	40.1	8.3	19.8
Other Marital Status	37.6	19.7	30.5	45.0	32.2	39.5
Commuter	43.1	29.6	38.4	51.0	41.2	46.5
Other	34.7	16.0	26.8	40.9	25.1	34.7
Total	36.0	16.4	28.7	43.7	30.0	37.9

Sources. See Footnote 1 and Table 9. Also see Appendix Table 1.

TABLE 12

Estimated Contribution of Earnings to Term-Time Expenses by Sex (percent of term-time expenses)

	1960	1970
All Undergraduates	31	38
Male	38	43
Female	21	32

Sources. Table 11 and unpublished ACT 1971-72 survey results.

TABLE 13

Labor Force Participation Rates and Earnings of Full-Time Undergraduates by Type of Institution, Attendance, Family Status, Residence, and Sex, 1960 and 1970

	Married		Other Marital Status		Commuter		Other	
	Male	Female	Male	Female	Male	Female	Male	Female
			Participation Rates (percent)					
1960								
Public	97.4	59.9	87.2	72.5	83.1	69.9	90.8	74.5
Private	98.0	60.7	85.6	71.5	81.7	70.4	88.4	72.0
1970								
Public	96.5	65.1	87.4	79.2	84.7	75.7	90.3	82.4
Private	96.0	67.2	87.2	79.1	85.4	76.4	88.9	81.0
			Earnings (dollars per student with earnings)					
1960								
Public	2,107	1,106	997	539	1,035	611	973	495
Private	1,973	1,080	918	547	1,002	750	873	469
1970								
Public	3,662	1,830	1,573	1,027	1,576	1,138	1,571	939
Private	3,765	1,739	1,484	960	1,607	1,130	1,388	853

Source. Special tabulations of the U.S. Census, 1960, 1970.

TABLE 14

Labor Force Participation Rates of Married and Commuter Full-Time Undergraduates by Income Group, 1960 and 1970 (percent of total students)

	Married			Commuter		
	Male	Female	Total	Male	Female	Total
Household Income 1960						
$0-2,999	95.0	59.4	85.2	72.8	54.4	65.0
$3,000-4,999	96.4	64.3	89.2	71.9	54.7	65.5
$5,000-6,999	99.0	59.6	90.5	78.6	67.9	74.5
$7,000-9,999	99.6	64.0	89.8	84.4	73.1	80.2
$10,000-14,999	100.0	58.8	83.5	88.9	79.6	85.6
$15,000 +	100.0	40.9	67.1	85.3	71.1	80.4
Household Income 1970						
$0-4,999	91.2	69.4	83.5	67.3	54.4	61.3
$5,000-7,499	95.5	66.4	86.6	70.7	62.3	67.0
$7,500-9,999	98.0	66.7	88.6	78.4	68.2	73.9
$10,000-14,999	98.9	65.2	86.8	85.6	76.2	81.6
$15,000-19,999	99.3	65.8	83.8	90.3	83.3	87.4
$20,000 +	98.2	54.0	63.5	89.7	81.4	86.2

Source. Special tabulations of the U.S. Census, 1960, 1970.

TABLE 15

Earnings of Full-Time Undergraduates Age 16-24 in 1960 and 1970
(number of students in sample, dollars per student)

	Married			Commuter		
	Male	Female	Total	Male	Female	Total
Household Income, 1960						
None or Loss						
Number	1		1	4		4
Average Earnings				575		575
Standard Deviation				377		377
Under $2,000						
Number	153	57	210	94	55	149
Average Earnings	784	319	658	529	353	464
Standard Deviation	451	261		415	330	
$2,000-$2,999						
Number	27	43	170	80	42	122
Average Earnings	1,314	549	1,121	703	441	613
Standard Deviation	667	412		539	471	
$3,000-$3,999						
Number	113	43	156	125	55	180
Average Earnings	1,635	579	1,344	722	558	672
Standard Deviation	1,039	516		623	609	
$4,000-$4,999						
Number	107	32	139	148	76	224
Average Earnings	1,692	934	1,517	677	429	593
Standard Deviation	1,024	1,005		621	458	
$5,000-$6,999						
Number	128	55	183	508	303	811
Average Earnings	2,268	1,306	1,979	801	561	711
Standard Deviation	1,243	1,068		649	559	
$7,000-$9,999						
Number	30	22	52	807	452	1,259
Average Earnings	3,160	1,964	2,654	932	593	810
Standard Deviation	1,726	1,269		746	612	

[*Continued*]

TABLE 15 [Continued]

Earnings of Full-Time Undergraduates Age 16-24 in 1960 and 1970
(number of students in sample, dollars per student)

	Married			Commuter		
	Male	Female	Total	Male	Female	Total
$10,000-$14,999						
Number	10	11	21	842	469	1,311
Average Earnings	5,290	3,109	4,148	1,153	728	1,001
Standard Deviation	2,559	2,051		969	814	
$15,000+						
Number	3	1	4	441	224	665
Average Earnings	3,200	3,200	3,200	1,138	692	988
Standard Deviation	3,442			1,182	972	
Total						
Number	672	264	936	3,049	1,676	4,725
Average Earnings	1,637	943	1,441	961	618	839
Standard Deviation	1,279	1,102		872	714	
Household Income, 1970						
None or Loss						
Number	3		3	8	9	17
Average Earnings				1,138	822	971
Standard Deviation				678	824	
Under $3,000						
Number	662	361	1,023	288	215	503
Average Earnings	1,171	581	963	752	565	672
Standard Deviation	650	445		587	464	
$3,000-$4,999						
Number	802	438	1,240	488	342	830
Average Earnings	2,137	1,027	1,745	1,058	770	939
Standard Deviation	1,075	732		856	631	
$5,000-$7,499						
Number	892	478	1,370	972	723	1,695
Average Earnings	2,761	1,371	2,276	1,164	866	1,037
Standard Deviation	1,560	1,111		918	814	

$7,500-$9,999						
Number	497	328	825	1,611	1,197	2,808
Average Earnings	3,527	1,630	2,773	1,237	984	1,129
Standard Deviation	2,054	1,462		1,040	941	
$10,000-$14,999						
Number	235	291	526	4,900	3,357	8,257
Average Earnings	5,194	2,186	3,530	1,437	1,032	1,272
Standard Deviation	2,316	1,679		1,118	950	
$15,000-$19,999						
Number	18	46	64	3,954	2,801	6,755
Average Earnings	5,972	3,917	4,495	1,640	1,135	1,431
Standard Deviation	3,323	2,501		1,243	1,064	
$20,000-$29,999						
Number	3	9	12	3,089	2,233	5,322
Average Earnings	1,400	3,933	3,300	1,768	1,172	1,518
Standard Deviation	779	2,761		1,433	1,209	
$30,000+						
Number	3	5	8	1,179	899	2,078
Average Earnings	2,667	2,460	2,538	1,487	1,070	1,307
Standard Deviation	772	1,973		1,390	1,272	
Total						
Number	3,115	1,956	5,071	16,489	11,776	28,265
Average Earnings	2,583	1,387	2,122	1,493	1,055	1,311
Standard Deviation	1,855	1,366		1,223	1,043	

Source: See Appendix Table 1.

TABLE 16

Proportion of Full-Time Undergraduates Who Worked 1 to 14 Hours during the Census Week by Marital Status, Residence, Sex, and Age in 1960 and 1970

	Total		Married		Other Marital Status		Commuter		Other	
	1960	1970	1960	1970	1960	1970	1960	1970	1960	1970
Total	.598	.498	.441	.340	.619	.520	.530	.435	.688	.612
16-24	.613	.509	.453	.330	.626	.526	.533	.437	.698	.623
25-34	.447	.365	.427	.353	.473	.381	.477	.377	.469	.359
35+	n.a.	.366	n.a.	.366	n.a.	.366	n.a.	.352	n.a.	.374
Male	.555	.477	.435	.297	.577	.469	.487	.390	.662	.567
16-24	.568	.453	.445	.292	.581	.472	.487	.390	.670	.575
25-34	.457	.340	.423	.309	.503	.384	.477	.359	.527	.359
35+	n.a.	.342	n.a.	.302	n.a.	.373	n.a.	.365	n.a.	.391
Female	.669	.564	.468	.412	.682	.581	.615	.497	.721	.657
16-24	.683	.578	.486	.413	.691	.589	.619	.499	.732	.671
25-34	.411	.407	.444	.429	.379	.377	.478	.414	.314	.360
35+	n.a.	.377	n.a.	.387	n.a.	.358	n.a.	.333	n.a.	366

Source. Special tabulations of the U.S. Census, 1960, 1970.

TABLE 17

Distribution of Full-Time Undergraduates by Weeks Worked, Sex, Year, Marital Status, and Type of Living Arrangement

	1970						1960					
Weeks	1-13	14-26	27-39	40-47	48-52	Total	1-13	14-26	27-39	40-47	48-52	Total
Undergraduates	.418	.238	.129	.069	.146	1.00	.463	.219	.115	.058	.146	1.00
Total Male	.394	.245	.125	.068	.167	1.00	.427	.234	.112	.059	.167	1.00
Total Female	.449	.229	.135	.070	.117	1.00	.525	.192	.119	.055	.108	1.00
Married	.230	.191	.163	.089	.326	1.00	.275	.191	.158	.083	.293	1.00
Total Male	.171	.168	.153	.087	.421	1.00	.232	.185	.154	.087	.342	1.00
Total Female	.321	.225	.179	.092	.183	1.00	.402	.210	.169	.072	.147	1.00
Other Marital Status	.441	.244	.125	.067	.123	1.00	.485	.223	.110	.055	.128	1.00
Total Male	.424	.256	.121	.066	.133	1.00	.455	.241	.107	.055	.142	1.00
Total Female	.464	.229	.130	.068	.109	1.00	.535	.191	.115	.054	.105	1.00
Commuter	.432	.223	.121	.068	.155	1.00	.443	.225	.110	.060	.162	1.00
Total Male	.415	.224	.123	.072	.167	1.00	.411	.241	.111	.065	.171	1.00
Total Female	.456	.221	.120	.064	.139	1.00	.502	.197	.107	.050	.144	1.00
Resident	.449	.260	.127	.065	.099	1.00	.509	.221	.110	.051	.109	1.00
Total Male	.431	.280	.120	.061	.106	1.00	.482	.242	.104	.049	.124	1.00
Total Female	.470	.236	.137	.070	.089	1.00	.552	.188	.119	.055	.086	1.00

Source. Special tabulations of the U.S. Census, 1960, 1970.

TABLE 18

Expected Distribution of Full-Time Students and Reweighted ACT Sample, 1972, by Type of Institution

	Expected	ACT
Public		
Universities	21.7	20.0
Four-Year	30.7	30.4
Two-Year	23.0	23.4
	75.4	73.8
Private		
Universities	5.6	5.1
Four-Year	16.7	19.2
Two-Year	1.7	1.9
	24.0	26.2

Sources: Expected: DHEW, USOE, National Center for Educational Statistics Tabulations, Fall Enrollment, unpublished.

ACT: Reweighted ACT runs, University of Illinois.

TABLE 19

Mean Spending Patterns and Parental Contributions by Income Quartile by Level of Student Earnings (standard deviations in parentheses)

	Expenditures Net of Scholarships	Tuition Net of Scholarships	Durables, Travel, etc.	Parental Contributions
Low Income Quartile				
All	$1,678 (1,257)	$ 22 (656)	$ 585 (811)	$449 (686)
Earned Less than $250	1,506 (1,405)	-16 (725)	495 (869)	515 (749)
$250-749	1,641 (1,044)	64 (563)	539 (634)	466 (678)
$750-1,249	1,795 (1,174)	21 (630)	621 (760)	329 (633)
$1,250 +	2,420 (1,190)	40 (713)	1,140 (1,034)	286 (372)
Second Income Quartile				
All	$1,877 (1,263)	$109 (749)	$ 640 (732)	$548 (758)
Earned Less than $250	1,765 (1,340)	56 (744)	594 (776)	665 (838)
$250-749	1,898 (1,471)	154 (699)	598 (804)	565 (837)
$750-1,249	1,936 (764)	135 (581)	739 (499)	425 (486)
$1,250 +	2,010 (977)	77 (1,059)	743 (674)	381 (556)
Third Income Quartile				
All	$2,142 (1,327)	$236 (588)	$ 725 (819)	$643 (776)
Earned Less than $250	2,113 (1,278)	271 (570)	696 (865)	908 (899)
$250-749	1,892 (937)	242 (563)	549 (581)	621 (811)
$750-1,249	2,064 (879)	241 (527)	619 (658)	581 (620)
$1,250 +	2,708 (2,020)	171 (701)	1,184 (1,057)	363 (495)
High Income Quartile				
All	$2,567 (1,761)	$470 (673)	$ 903 (1,370)	$ 843 (926)
Earned Less than $250	2,186 (1,113)	358 (569)	683 (644)	1,234 (1,077)
$250-749	2,429 (1,766)	523 (724)	719 (1,369)	931 (869)
$750-1,249	2,516 (1,465)	484 (689)	832 (892)	689 (857)
$1,250 +	3,224 (2,288)	491 (663)	1,480 (1,974)	431 (669)

Source. ACT special tabulations.

TABLE 20

Principal Factors and Equations Explaining Levels of Student Earnings for 19 Ways of Stratifying Students
(last line in B column is constant)

	Multiple R	R Square	RSQ Change	Simple R	B	Beta
Both Sexes, All Students						
Sex Male	0.20139	0.04056	0.04056	0.20139	385.84477	0.20445
Actual Minus Exp. Par. Cont.	0.23530	0.05537	0.01481	-0.12918	-0.04909	-0.09264
Middle Ability	0.25745	0.06628	0.01091	0.08225	198.24244	0.10249
High Income	0.27198	0.07397	0.00769	0.11452	0.01211	0.12062
Upper Middle Income	0.27409	0.07512	0.00115	0.01036	0.00987	0.04858
Lower Middle Income	0.27460	0.07541	0.00028	-0.04735	0.00728	0.02037
High Ability	0.27488	0.07556	0.00015	-0.03832	-32.62950	-0.01725
Public Institutions	0.27494	0.07559	0.00003	-0.00127	-12.31607	-0.00575
					378.59275	
Males, All						
Actual Minus Exp. Par. Cont.	0.16038	0.02572	0.02572	-0.16038	-0.07045	-0.12129
Middle Ability	0.21334	0.04551	0.01979	0.14022	322.49814	0.14101
High Income	0.23508	0.05526	0.00975	0.13326	0.01502	0.13008
Upper Middle Income	0.24154	0.05834	0.00308	-0.01229	0.01280	0.05794
Lower Middle Income	0.24205	0.05859	0.00024	-0.07071	-0.00742	-0.01683
High Ability	0.24245	0.05878	0.00019	-0.08325	-43.54644	-0.02026
Public Institutions	0.24266	0.05888	0.00010	-0.01521	-26.44505	-0.01052
					716.59272	

Females, All						
High Income	0.07861	0.00618	0.00618	0.07861	0.00828	0.12005
Lower Middle Income	0.10108	0.01022	0.00404	0.03442	0.01918	0.08442
Middle Ability	0.11354	0.01289	0.00267	0.04490	72.83075	0.05614
Upper Middle Income	0.12030	0.01447	0.00158	-0.01361	0.00676	0.04376
Actual Minus Exp. Par. Cont.	0.12213	0.01492	0.00044	-0.03904	-0.00812	-0.02073
High Ability	0.12238	0.01498	0.00006	-0.00540	14.55413	0.01091
Public Institutions	0.12255	0.01502	0.00004	-0.00022	9.48196	0.00660
					423.30093	
Males, Low Income Quartile						
Actual Minus Exp. Par. Cont.	0.21103	0.04454	0.04454	-0.21103	-0.13817	-0.22088
Middle Ability	0.24003	0.05762	0.01308	0.12677	159.85018	0.13243
Disposable Income (Family)	0.25543	0.06525	0.00763	0.08341	0.02505	0.08661
High Ability	0.26019	0.06770	0.00245	-0.02843	75.62585	0.05828
Public Institutions	0.26214	0.06872	0.00102	0.00776	-49.78410	-0.03239
					508.00622	
Males, Second Income Quartile						
Middle Ability	0.06476	0.00419	0.00419	0.06476	183.45499	0.09420
Public Institutions	0.09239	0.00854	0.00434	-0.05987	-162.54628	-0.06215
High Ability	0.09883	0.00977	0.00123	-0.00926	81.20677	0.04107
Disposable Income	0.10078	0.01016	0.00039	0.03152	0.02199	0.02020
Actual Minus Exp. Par. Cont.	0.10088	0.01018	0.00002	0.02178	0.00462	0.00457
					593.81445	
Males, Third Income Quartile						
Disposable Income	0.26445	0.06993	0.06993	0.26445	0.25285	0.27155
Actual Minus Exp. Par. Cont.	0.32619	0.10640	0.03647	-0.17877	-0.17117	-0.[illegible]68
Public Institutions	0.33041	0.10917	0.00277	-0.06772	-126.75433	-[illegible]05631
High Ability	0.33482	0.11211	0.00293	-0.06232	-85.48661	0.04977
Middle Ability	0.33486	0.11213	0.00002	0.08032	12.52179	0.00704
					-1631.14857	

[Continued]

TABLE 20 [Continued]

Principal Factors and Equations Explaining Levels of Student Earnings for 19 Ways of Stratifying Students
(last line in B column is constant)

	Multiple R	R Square	RSQ Change	Simple R	B	Beta
Males, High Income Quartile						
Middle Ability	0.23604	0.05571	0.05571	0.23604	490.19475	0.16886
Actual Minus Exp. Par. Cont.	0.25800	0.06656	0.01085	-0.10555	-0.06375	-0.11951
High Ability	0.26573	0.07061	0.00405	-0.19860	-230.01528	-0.08870
Disposable Income	0.27213	0.07406	0.00344	-0.05068	-0.01133	-0.05971
Public Institutions	0.27308	0.07457	0.00052	0.06226	64.63312	0.02343
					1225.63183	
Females, Low Income Quartile						
Middle Ability	0.07236	0.00524	0.00524	0.07236	98.62529	0.07773
Actual Minus Exp. Par. Cont.	0.08022	0.00643	0.00120	-0.03976	-0.01861	-0.03313
High Ability	0.08284	0.00686	0.00043	-0.00712	39.10875	0.02267
Public Institutions	0.08353	0.00698	0.00011	0.02319	18.06154	0.01133
Disposable Income	0.08367	0.00700	0.00002	0.00829	-0.00159	-0.00506
					422.34815	
Females, Second Income Quartile						
Actual Minus Exp. Par. Cont.	0.11935	0.01425	0.01425	-0.11935	-0.09055	-0.11789
Disposable Income	0.15213	0.02314	0.00890	0.09631	0.07427	0.10183
High Ability	0.16300	0.02657	0.00342	-0.04415	-147.38347	-0.10683
Middle Ability	0.17428	0.03037	0.00380	-0.02208	-103.65886	-0.08085
Public Institutions	0.17724	0.03141	0.00104	0.03173	53.03341	0.03252
					127.35621	

Females, Third Income Quartile						
High Ability	0.02754	0.00076	0.00076	-0.02754	-48.29399	-0.03517
Disposable Income	0.03019	0.00091	0.00015	0.00883	0.00927	0.01319
Public Institutions	0.03146	0.00099	0.00008	0.01149	13.81505	0.00904
Actual Minus Exp. Par. Cont.	0.03267	0.00107	0.00008	0.00594	0.00429	0.00872
Middle Ability	0.03323	0.00110	0.00004	0.01533	-11.62973	-0.00892
					458.55855	
Females, Upper Income Quartile						
Disposable Income	0.11120	0.01237	0.01237	0.11120	0.01080	0.11873
Middle Ability	0.13818	0.01909	0.00673	0.08260	229.51363	0.17330
High Ability	0.15668	0.02455	0.00546	-0.02609	149.75187	0.11705
Public Institutions	0.15682	0.02459	0.00004	-0.00522	-9.28237	-0.00702
Actual Minus Exp. Par. Cont.	0.15690	0.02462	0.00002	-0.02337	-0.00153	-0.00495
					265.96717	
Males, Public (Truncated Distribution)						
Middle Ability	0.10535	0.01110	0.01110	0.10535	185.66854	0.15618
Actual Minus Exp. Par. Cont.	0.13351	0.01783	0.00673	-0.07725	-0.01798	-0.06286
Upper Middle Income	0.15102	0.02281	0.00498	0.06985	0.00950	0.08382
High Income	0.16509	0.02725	0.00445	0.03903	0.00374	0.06435
High Ability	0.17435	0.03040	0.00314	-0.00958	81.78499	0.07208
Lower Middle Income	0.17689	0.03129	0.00089	-0.06803	-0.00763	-0.03388
					664.44530	
Males, Public University (Truncated Distribution)						
High Income	0.14446	0.02087	0.02087	0.14446	0.01896	0.27122
Middle Ability	0.19240	0.03702	0.01615	0.13440	71.43108	0.06381
Upper Middle Income	0.21857	0.04777	0.01076	0.00132	0.01922	0.17580
Actual Minus Exp. Par. Cont.	0.22395	0.05015	0.00238	0.00638	0.01403	0.05153
Lower Middle Income	0.22753	0.05177	0.00162	-0.08104	0.01184	0.05659
High Ability	0.23080	0.05327	0.00150	-0.12191	-85.28450	-0.07824
					613.73008	

[Continued]

TABLE 20 [Continued]

Principal Factors and Equations Explaining Levels of Student Earnings for 19 Ways of Stratifying Students
(last line in B column is constant)

	Multiple R	R Square	RSQ Change	Simple R	B	Beta
Males, Public 4-Year (Truncated Distribution)						
Middle Ability	0.11404	0.01300	0.01300	0.11404	310.19019	0.25330
High Ability	0.22153	0.04908	0.03607	0.07715	263.39892	0.22815
Upper Middle Income	0.23800	0.05664	0.00757	0.11349	0.01072	0.08903
Actual Minus Exp. Par. Cont	0.24903	0.06201	0.00537	-0.07513	-0.01617	-0.06740
Lower Middle Income	0.25291	0.06397	0.00195	-0.05957	-0.01006	-0.04346
High Income	0.25302	0.06402	0.00005	-0.02551	0.00044	0.00885
					558.03958	
Males, Private (Truncated Distribution)						
High Income	0.24296	0.05903	0.05903	0.24296	0.02650	0.40914
Middle Ability	0.27406	0.07511	0.01608	0.09127	31.13662	0.02450
Upper Middle Income	0.28311	0.08015	0.00504	-0.08283	0.01805	0.14150
High Ability	0.29190	0.08521	0.00505	-0.06038	-140.48974	-0.12171
Actual Minus Exp. Par. Cont.	0.29964	0.08979	0.00458	-0.06037	0.03275	0.08055
Lower Middle Income	0.30011	0.09007	0.00028	-0.11402	0.00563	0.02049
					641.05695	
Females, Public (Truncated Distribution)						
High Income	0.09579	0.00918	0.00918	-0.09579	-0.00578	-0.10765
High Ability	0.12174	0.01482	0.00564	0.05999	116.85469	0.11915
Upper Middle Income	0.13540	0.01833	0.00351	0.09489	0.00493	0.04171
Middle Ability	0.14520	0.02108	0.00275	0.00575	63.56844	0.06920
Lower Middle Income	0.15048	0.02264	0.00156	-0.01713	-0.00733	-0.04613
Actual Minus Exp. Par. Cont.	0.15145	0.02294	0.00029	0.01765	0.00408	0.01875
					541.79959	

Females, Public University (Truncated Distribution)						
High Income	0.12923	0.01670	0.01670	0.12923	0.00753	0.19186
Middle Ability	0.15093	0.02278	0.00608	0.07386	91.06756	0.08865
Upper Middle Income	0.16734	0.02800	0.00522	0.01866	0.01290	0.11121
Lower Middle Income	0.18781	0.03527	0.00727	0.02392	0.02131	0.09655
Actual Minus Exp. Par. Cont.	0.19319	0.03732	0.00205	-0.05541	-0.01457	-0.04487
High Ability	0.19344	0.03742	0.00010	-0.04888	16.46468	0.01628
					497.35720	
Females, Public 4-Year (Truncated Distribution)						
Lower Middle Income	0.04655	0.00217	0.00217	0.04655	0.01374	0.08107
Upper Middle Income	0.05889	0.00347	0.00130	0.02395	0.00756	0.06210
High Income	0.07963	0.00634	0.00287	0.01503	0.00301	0.06003
High Ability	0.08195	0.00672	0.00038	0.02519	39.93913	0.03749
Middle Ability	0.08392	0.00704	0.00033	-0.00159	25.63629	0.02534
Actual Minus Exp. Par. Cont.	0.08408	0.00707	0.00003	0.00021	0.00167	0.00537
					573.03656	
Females, Private (Truncated Distribution)						
High Ability	0.12196	0.01487	0.01487	-0.12196	-150.93124	-0.15965
High Income	0.14854	0.02206	0.00719	0.06970	0.00571	0.10284
Actual Minus Exp. Par. Cont.	0.15769	0.02487	0.00280	0.02127	0.01491	0.05394
Upper Middle Income	0.16095	0.02591	0.00104	-0.07784	-0.00259	-0.02176
Middle Ability	0.16273	0.02648	0.00058	0.07135	-35.56127	-0.03650
Lower Middle Income	0.16361	0.02677	0.00029	-0.00513	0.00421	0.02125
					696.92939	

Source: Regression equations from ACT data.

TABLE 21

Student Employment 1969-1973
(percent)

	Full-Time Students			Worked Fewer than 13 Weeks	Teenage Unemployment
	Employed	Unemployed	Total		
1969	30.2	8.7	38.9	.475	12.2
1970	30.2	10.5	40.7	.507	15.3
1971	28.6	10.9	39.5	.502	16.9
1972	29.5	10.0	39.5	.526	16.2
1973	30.6	10.2	40.8	.514	14.5

Sources. Employment of Students: CPS Surveys, October 1969-1973. Percent Worked Fewer than 13 Weeks: CPS Surveys, March, 1969-1973. Teenage Unemployment: Annual Averages, U.S. Department of Labor.

APPENDIX TABLE 1

Estimated Mean Earnings of Full-Time Undergraduates Who Worked in Current Dollars (standard deviation in parentheses)

	1959			
		Other Marital Status		
	Married	Commuter	Other	Total
Male	1,970	1,002	914	1,074
16-24	1,637 (1,279)	961 (872)	872 (784)	961 (884)
25-34	2,368 (1,949)	1,584 (1,525)	1,619 (1,546)	2,001 (1,804)
35+	n.a.	n.a.	n.a.	n.a.
Female	1,086	652	496	588
16-24	943 (1,102)	618 (714)	473 (581)	542 (670)
25-34	1,337 (1,383)	1,644 (1,685)	1,474 (1,411)	1,436 (1,460)
35+	n.a.	n.a.	n.a.	n.a.
Total				889
16-24				804 (835)
25-34				1,882 (1,753)
35+				n.a.

	1969			
		Other Marital Status		
	Married	Commuter	Other	Total
Male	3,118	1,525	1,434	1,659
16-24	2,583 (1,855)	1,493 (1,223)	1,356 (1,112)	1,518 (1,271)
25-34	3,926 (2,633)	2,682 (2,211)	2,921 (2,276)	3,448 (2,534)
35+	4,958 (3,047)	1,657 (1,465)	2,462 (2,151)	3,513 (2,915)
Female	1,674	1,079	884	1,037
16-24	1,387 (1,366)	1,055 (1,043)	825 (871)	950 (991)
25-34	2,082 (2,107)	2,287 (2,010)	2,638 (2,432)	2,256 (2,200)
35+	2,055 (1,943)	1,789 (2,085)	2,191 (2,012)	2,064 (1,980)
Total				1,391
16-24				1,273 (1,192)
25-34				3,028 (2,486)
35+				2,598 (2,469)

Source: Unpublished Census, special tabulations, excluding all students with earnings over $10,000 in 1959 and 1969, presumably employed full time in those years, while not attending school full time.